

UNITED STATES DISTRICT COURT
DISTRICT OF NEW HAMPSHIRE

Media Digital, Inc.

v.

Civil No. 12-cv-313-JL
Opinion No. 2014 DNH 088

Toshiba America Information
Systems, Inc. and Vizio, Inc.

OPINION AND ORDER

Touchscreen computers, and touchscreen computer tablets in particular, are ubiquitous in the contemporary United States. Among the many companies now manufacturing and selling such tablets for consumption in the U.S. market are defendants Toshiba America Information Systems, Inc. and Vizio, Inc. Among the many functions their tablets perform is playing music and other media, frequently by means of a media player that allows the user to update or otherwise control a playlist.

Although these devices are commonplace now, that was not the case some 25 years ago, when plaintiff Media Digital, Inc. ("MDI") sought a patent for a computer touch screen radio station control system. That patent, United States Patent No. 6,101,324 (filed Feb. 5, 1990) ("the '324 patent"), is at issue in this case. MDI alleges that Toshiba and Vizio, by manufacturing and selling touchscreen tablets equipped with user-controlled playlists, infringe the '324 Patent. Unsurprisingly, the parties dispute the scope of the patent, and have asked the court to construe seven of the terms employed in Claim 1 of the '324

patent, and to determine the corresponding structures for each of the means-plus-function limitations found in that claim pursuant to 35 U.S.C. § 112(f). (The parties disagree as to the exact number of these limitations, as the plaintiffs maintain that one of Claim 1's means-plus-function clauses--describing a function performed by "touch screen means"--is not subject to § 112(f).)

The court, which has jurisdiction over this matter under 28 U.S.C. §§ 1331 (federal question) and 1338(a) (patent), received briefing and conducted a hearing on these issues in accordance with Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996). The court construes the disputed terms--and determines the corresponding structures--as set forth herein.

I. Applicable legal standard

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." Innova/Pure Water, Inc. v. Safari Water Filtration Sys, Inc., 381 F.3d 1111, 1115 (Fed. Cir. 2004). The meaning of language in a claim presents a question of law for the court to decide. Markman, 517 U.S. at 388. In construing the language in a claim, the court's "task is not to decide which of the adversaries is correct" in its proffered interpretation, but to fulfill the court's "independent obligation to determine the meaning of the claims, notwithstanding the views asserted by the

adversary parties.” [Exxon Chem. Patents, Inc. v. Lubrizol Corp.](#), 64 F.3d 1553, 1555-56 (Fed. Cir. 1995).

In the absence of the patentee’s express intent to impart a novel meaning to the claim terms, the words of a claim take on the full breadth of the ordinary and customary meanings attributed to them by persons of ordinary skill in the relevant art at the time of the invention. See, e.g., [Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings](#), 370 F.3d 1354, 1360 (Fed. Cir. 2004); [Tate Access Floors, Inc. v. Interface Architectural Res., Inc.](#), 279 F.3d 1357, 1370 (Fed. Cir. 2002). To ascertain this meaning, the court must first examine the intrinsic evidence, including the claims themselves, the specification, and any prosecution history submitted by the litigants. See, e.g., [Goldenberg v. Cytogen, Inc.](#), 373 F.3d 1158, 1164 (Fed. Cir. 2004). The court starts with the actual language of the claim. See [Int’l Rectifier Corp. v. IXYS Corp.](#), 361 F.3d 1363, 1369-70 (Fed. Cir. 2004); [3M Innovative Props. Co. v. Avery Dennison Corp.](#), 350 F.3d 1365, 1370 (Fed. Cir. 2003). “If the claim language is clear on its face, then [the court’s] consideration of the rest of the intrinsic evidence is restricted to determining if a deviation from the clear language of the claims is specified.” [Interactive Gift Express, Inc. v. Compuserve](#)

Inc., 256 F.3d 1323, 1331 (Fed. Cir. 2001); see also Int'l Rectifier, 361 F.3d at 1370.

Although the court must therefore construe the claims in light of the specification, it must take care not to read limitations from the specification into the claims. Innova/Pure Water, 381 F.3d at 1117; Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 904 (Fed. Cir. 2004). "If the meaning of the claim limitations is apparent from the totality of the intrinsic evidence, then the claim has been construed." Interactive Gift Express, 256 F.3d at 1332. Nonetheless, in arriving at the proper construction of a claim, the court may refer to extrinsic evidence, such as dictionaries or expert testimony, "to better understand the underlying technology and the way in which one of skill in the art might use the claim terms," keeping in mind "the flaws inherent" in such evidence." Phillips v. AWH Corp., 415 F.3d 1303, 1317-18 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted).

II. Background

MDI holds an assignment of the '324 Patent from its inventors, John M. Connell (who is also MDI's president), Dennis Mills, Doug Cyr, and Norman Buck. The patent, which is titled "Computer Touch Screen Radio Station Control System," discloses "[a] computerized audio or video signal control system controlled

by an announcer and having a display of the available signal sources and scheduled events which can be activated, mixed, faded and cued by the announcer in the scheduled order or in an order the announcer desires." '324 Patent, Abstract. The patent explains that, historically, "audio or video production or broadcast systems included a manually controlled mixing and switching board," which was "complex and hard to use" due to "the large number of available inputs or sources, the multiple outputs available and the options available for each source." Id. col. 1:16-22. Previous attempts to remedy the frequent errors this caused through full automation, i.e., "by having a computer replace all the operators and oversee the entire operation of the station," resulted in additional problems due to "mechanical malfunctions" or the computer's inability "to rapidly rearrange the schedule of events." Id. col. 1:27-38. Thus, the patent states, there was a need for "a more flexible program environment . . . that could be changed by an operator to fit the situation as it arose," but which "did not require highly trained operators or produce the frequent errors which occurred in manual control boards." Id. col. 1:40-50.

So, the patent summarizes, "[t]he basic system" of the disclosed invention "uses a computer integrated with a touch screen to replace the mixing and routing board in a radio or

television station or production facility," thereby permitting "the broadcast announcer to perform the program mixing and routing tasks without the need for a skilled operator." Id. col. 1:65-2:3. Scheduled events are displayed on the touch screen, and the announcer is able "to change events to different time slots, to cancel events, to cue events for review prior to actual airing, to initiate events immediately and [to perform] all other functions necessary to control and log programming of a radio, television or production broadcast." Id. col. 2:3-9. The patent thus claims, in relevant part:

A system to provide interactive, automated control of an audio or video program formed from a plurality of signal sources, said control system being responsive to commands from one or more system operators or announcers comprising:

touch screen means for displaying information and for receiving input information by way of the location of a touch on said touch screen means;

means for generating and displaying on said touch screen means a portion of a scheduled log of program events;

means for correlating a program event with a source;

means or allowing an operator to select a program event from the log for activation at that time by touching said touch screen means;

means for activating the selected event;

means for allowing the operator to de-select an active event from the activated status at that

time by touching said touch screen means; and means for de-activating the de-selected event.

Id. col. 26:60-27:12.¹

MDI filed eight actions in this court in late 2012 and early 2013, alleging that Toshiba, Vizio, and several other entities are infringing on the '324 patent by manufacturing and selling touchscreen controlled tablet computers equipped with media players and the ability to update a music playlist. MDI stipulated to the dismissal of its claims against several of the defendants; the court consolidated the remaining cases for pretrial proceedings. See Orders of [March 26, 2013](#); [April 15, 2013](#); and [June 3, 2013](#). Following further stipulations of dismissal by MDI, only Toshiba and Vizio remain as defendants.

Pursuant to [Supplemental Patent Rules 6.1\(c\)](#) and [\(e\)](#), the parties have filed a joint claim construction and prehearing statement and claim construction briefs, seeking the court's ruling on the meaning of the following seven terms employed in Claim 1 of the '324 Patent:

- "a plurality of signal sources"/"a source";
- "operators or announcers";
- "scheduled log of program events"/"the log";

¹The patent also contains other, dependent claims, but the court need not concern itself with those at this time, as the parties have only sought the court's construction of the terms used in Claim 1.

- “select a program event”;
- “activation”/“activating the selected event”;
- “de-select [an active event]”; and
- “deactivating the de-selected event.”

The parties also seek the court’s ruling on the corresponding structure for each of the means-plus-function limitations in Claim 1, see 35 U.S.C. § 112(f), though they disagree whether “touch screen means for displaying information and for receiving input information by way of the location of a touch on said touch screen means” is a means-plus-function limitation subject to § 112(f).

III. Analysis

A. Disputed terms²

i. “a plurality of signal sources”/“a source”

For the reasons that follow, the court construes “source” as “an electrical or electronic device which provides a signal which is an event which may form a portion of a program,” and a “plurality of signal sources” as two or more such devices.

This is essentially identical to the construction proffered by MDI. In support of this construction, MDI points primarily to

²The court construes here the first three disputed terms. The remaining four terms, which appear in Claim 1’s means-plus-function limitations, are addressed in the following section.

a memorandum submitted during the prosecution of the patent, which provides the same definition for the term "program source." See MD000316. This, MDI avers, "is an example of the patentee acting as his own lexicographer," so the court "need not look any further than this explicit definition." MDI Resp. Br. (document no. 69) at 7; see, e.g., Schoenhaus v. Genesco, Inc., 440 F.3d 1354, 1358 (Fed. Cir. 2006) ("The patentee is free to act as his own lexicographer, and may set forth any special definitions of the claim term in the patent specification or file history, either expressly or impliedly.").

Defendants, though they acknowledge (and, in fact, also rely upon) this definition, propose a much more narrow construction, a key component of which is that the "source" device is external to and separate from the device to which the signal is sent. The term "a plurality of signal sources," they say, refers to "two or more external devices capable of delivering information to a separate location by way of an electrical pulse for transmission in an aired radio or television broadcast," while a "source" is "one of the constituent devices that in the aggregate form the plurality of sources." They point to the patent's specification, which refers to connecting or linking source locations to separate destinations, and to radio and television broadcasting, as support for this interpretation. MDI counters by arguing that

the defendants cannot read limitations from the preferred embodiment described in the specification into the claims. See, e.g., [Liebel-Flarsheim Co. v. Medrad, Inc.](#), 358 F.3d 898, 913 (Fed. Cir. 2004) (“[I]t is improper to read limitations from a preferred embodiment described in the specification--even if it is the only embodiment--into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.”).

MDI’s interpretation is the better one. As MDI notes, a patentee may act as its own lexicographer. See [GE Lighting Solutions, LLC v. AgiLight, Inc.](#), 750 F.3d 1304, 1309 (Fed. Cir. 2014). To do so, it must “clearly set forth a definition of the disputed claim term” in either the specification or prosecution history, and “clearly express an intent to define the term.” Id. That principle would appear to apply here. As just mentioned, the prosecution history states that a “program source³ is . . . an electrical or electronic device which provides a signal which is an event which may form a portion of the program.” MD000316. That suffices to set forth a clear definition of the term. See [Sinorgchem Co., Shandong v. Int’l Trade Comm’n](#), 511 F.3d 1132,

³MDI operates on the assumption that the terms “program source” and “source” are interchangeable. The defendants have not argued to the contrary, and, based upon its reading of the record, the court perceives no reason the two terms would not be synonymous.

1136 (Fed. Cir. 2007) (word "is" signifies "that a patentee is serving as its own lexicographer" (quotation marks omitted)).

That the patentee intended to define the term as used in the patent is made clear by the context in which the definition was provided. At the time, the patent examiner had rejected several of the proposed claims of the patent as having been disclosed by the prior art, and the patentee had appealed the rejection. The patent examiner's answer to the appeal stated that "it was well known to a skilled artisan of television broadcasting, at the time the invention was made, that the program source . . . is a scheduled log of program events." MD000308. To refute this contention, and to make clear that the source and the scheduled log of program events were not the same thing, the patentee supplied the definition in question. That definition, then, was intended to delineate the bounds of the term.

The defendants have presented no developed argument as to why the lexicographer principle does not apply to the definition of "source" set forth in the prosecution history of the '324 Patent. At oral argument, defendants' counsel suggested that adopting the definition in the prosecution history would override the hierarchy of intrinsic evidence by elevating the prosecution history to a position of more importance than the claim language or the specification, which is generally disfavored. See, e.g.,

Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) (outlining hierarchy of intrinsic evidence). As already mentioned, however, the Court of Appeals for the Federal Circuit has made clear that all that is ordinarily required for a patentee to act as its own lexicographer is that the patentee “clearly set forth a definition of the disputed claim term in either the specification or prosecution history.” CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002) (emphasis added); see also Schoenhaus, 440 F.3d at 1358 (identifying “the application’s file history” as one “place in which an inventor may lay out a special definition of a claim term”). The ordinary hierarchy of evidence therefore does not apply in such a scenario.

In any event, there is nothing in either the claim language or elsewhere in the patent that contradicts the definition set forth in the prosecution history. While the defendants assert that the patent’s specification demonstrates that a “source” must be separate from and external to the location to which any signal is sent, the court cannot agree. To be sure, the patent’s description of the preferred embodiment speaks of sources being “connect[ed]” to an output, which could be taken to suggest that a source is ordinarily distinct from the output. ‘324 Patent, col. 3:65-4:2, 7:40-42. Other portions of the patent might also

be taken to make this suggestion. See, e.g., id. Fig. 1 (showing sources as separate from touchscreen computer); cf. also MD000458 (portion of prosecution history identifying sources as "linked to the output of the station"). In construing claim terms, however, this court must take care "to avoid reading limitations appearing in the specification into the claims," and should refer to the specification only "to ascertain the meaning of the claim term as it is used by the inventor in the context of the entirety of his invention, and not merely to limit a claim term." Interactive Gift Express, 256 F.3d at 1331-32 (internal quotation marks and alterations omitted); see also Raytheon Co. v. Roper Corp., 724 F.2d 951, 957 (Fed. Cir. 1983) ("That claims are interpreted in light of the specification does not mean that everything expressed in the specification must be read into all the claims."). By importing concepts of externality and separateness into the meaning of "source," the court would be overstepping those bounds, because nothing in the excerpts upon which the defendants rely unequivocally shows that those concepts are inherent in the meaning of the term "source," as used by the inventor and as understood by a person of ordinary skill in the relevant art. At best, they show that sources may be external in one possible configuration of the claimed invention.

MDI's interpretation of the term "source" as "an electrical or electronic device which provides a signal which is an event which may form a portion of the program" is, for the foregoing reasons, preferable to the defendants' alternative, and the court adopts that construction. A "plurality of signal sources" is, naturally, two or more such devices. See, e.g., York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1575 (Fed. Cir. 1996) (term "plurality" means "the state of being plural," i.e., "at least two").

ii. "operators or announcers"

For the reasons that follow, the court construes "operators" as "personnel in an audio or video production or broadcast studio responsible for controlling the technical equipment necessary for an audio, visual, or audiovisual production or broadcast," and "announcers" as "personnel in an audio or video broadcast studio responsible for speaking or otherwise presenting information to listeners or viewers."

This differs in some respects from the parties' proposed constructions. In MDI's telling, the reference to "operators or announcers" does nothing more than "describe that there is a user of the claimed system." An "operator," MDI asserts, is simply "a person using or operating the system" disclosed in the patent, and the court need not construe the term "announcer," which, as a

more narrow description that applies only to the preferred embodiment of broadcasting, is necessarily encompassed within that definition. The defendants, on the other hand, assert that the two terms delineate two different concepts: "operators" are "station personnel responsible for controlling the technical equipment necessary for a program broadcast via radio or television media," while "announcers" are "station personnel (sometimes referred to as anchors, DJ's, on-air talent, or presenters) responsible for hosting a program broadcast via radio or television media."

MDI's construction of the term "operators" as, basically, "users," has some superficial appeal. In ordinary usage, after all, the terms "operators" and "users" can sometimes be used interchangeably; in fact, MDI asserts that its construction follows from the "plain reading of the term 'operator.'" Despite the occasional synonymy between the words, however, the court does not agree that the "plain reading" of "operators" points to all persons who might conceivably use or operate the system disclosed in the patent. Even in lay terminology, "operators" has a significantly more narrow and specialized connotation than, simply, "users"; it suggests persons who are engaged specifically "in the mechanical aspect of any process or activity." Webster's Third New Int'l Dictionary 1581 (1986); cf. Prot. Fire & Cas. Co.

[v. Cornelius](#), 176 Neb. 75, 83 (1963) ("The terms 'use' and 'operation' are not interchangeable nor synonymous. They have separate meanings."). So, in a somewhat dated example, telephone "operators" connect calls by controlling switchboards; telephone "users," however, simply speak on their telephones.

This court's goal in construing a claim is, in any event, not to ascertain what a layperson would understand the terms used in the patent's claims to mean; rather, "[t]he touchstone for discerning the usage of claim language is the understanding of those terms among artisans of ordinary skill in the relevant art at the time of invention." [Metabolite Labs.](#), 370 F.3d at 1360. As the patent itself explains, the field in question is "control systems, especially those used in audio and video production and broadcast facilities." '324 Patent, col. 1:11-14; see also MD000245 (describing as "experts in the field" two individuals working in the broadcast audio field). And there is ample evidence indicating that both "operators" and "announcers" are terms that had separate, specific meanings to persons of ordinary skill in that field at that time.

As an initial, purely semantic matter, the court cannot overlook that the claim employs the two terms disjunctively: "operators or announcers." As the Court of Appeals for the Federal Circuit has previously noted in the claim construction

context, “[t]he disjunctive ‘or’ plainly designates that a series describes alternatives.” [SkinMedica, Inc. v. Histogen Inc.](#), 727 F.3d 1187, 1199 (Fed. Cir. 2013). That alone hints that the patent, rather than using “announcers” to delineate a subset of the term “operators,” employs “announcers” as an alternative to that term.⁴ Yet that is not the only textual indicator that the term “operators” is not quite so broad as MDI argues: as the defendants note, a reading of “operators” that encompasses “announcers” ultimately renders the latter term surplusage, a result that is disfavored. See, e.g., [Merck & Co., Inc. v. Teva Pharm. USA, Inc.](#), 395 F.3d 1364, 1372 (Fed. Cir. 2005) (“A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.”).

The patent’s summary of the invention also implies that operators and announcers fulfill separate roles. Historically, it relates, systems for audio or video broadcast and production included manually controlled mixing and switching boards that

⁴It is true that “or” does not always denote alternatives; the word can also be used in a descriptive or explanatory sense, e.g., “the cuspids, or ‘canine teeth,’ are used for gripping and tearing.” When “or” is used in this sense, however, the second, explanatory word or phrase is customarily offset by commas and/or quotation marks (as in the foregoing example), see, e.g., [Pause Tech., LLC v. TiVo, Inc.](#), 419 F.3d 1326, 1334-35 (Fed. Cir. 2005), markers that are not present here. And, if “or” were used in an explanatory sense in the claim, that would effectively limit the scope of the term “operators” to “announcers” alone, which runs counter to the evidence discussed *infra*.

"were complex and hard to use, requiring skilled operators."

'324 Patent Col. 1:16-19. The invention, the summary goes on to explain, improves upon that regime because it "permits the broadcast announcer to perform the program mixing and routing tasks without the need for a skilled operator." Id. 1:65-2:3.

The necessary implication, then, is that an announcer would not ordinarily perform tasks of mixing and routing; those tasks would be performed by an operator instead. And further support for a distinction between operators and announcers can be drawn from the patent's description of a prior proposal for solving the problems posed by the complexity of mixing and switching boards: full automation "by having a computer replace all the operators and oversee the entire operation of the station" by "activat[ing] the right series of devices at the right time." Id. 1:27-29.

"Operators," as used in this phrase, plainly excludes announcers, who would still be needed to fulfill on-air duties.

While these excerpts from the specification are, by themselves, inconsistent with MDI's proffered interpretation for the term "operators or announcers," other evidence also supports the defendants' contention that a person of ordinary skill in the relevant art at the time of the invention would understand an "operator" as someone who operates technical audiovisual equipment, and an "announcer" as someone who speaks or presents

information to listeners or viewers over the air. So, for example, when the patent's background summary employs the term "operator," it usually does so in reference to some technical function. See generally id. at 1:16-62 (describing various tasks performed by "operators," including controlling mixing and switching boards, loading taped material into tape units, adjusting the program sequence to accommodate listener requests or announcements, and entering program events into a log). When the term "announcer" is used in the patent, however, it is usually in reference to the task of speaking on-air in a broadcast environment. See, e.g., id. at 4:30-34, 5:21-24, 10:64-66 (announcer responsible for reading copy); id. at 6:1-4 (announcer speaks on microphone); cf. also id. col. 2:1 (referring to "the broadcast announcer").

Other intrinsic evidence points to a similar conclusion. A number of exhibits filed with the Patent and Trademark Office in support of the applicants' amendments to their claims use the term "operators" to identify someone who is performing technical roles, and use the term "announcers" for someone responsible for on-air duties. So, for example, a 1987 presentation by the lead inventor (who, as noted supra at Part II, is MDI's president) explains that "[i]n a radio station, the focus of concentration is in fact on operation rather than 'on-air' duties," thus

distinguishing the two. MD000502. The "operation" referred to in the presentation, the article makes clear, involved the "handl[ing of] large numbers of available inputs or program sources" and "provid[ing] a large variety of functional options to these sources, as well as to the multiple outputs that are necessary," a process that traditionally "included a manually controlled mixing and switching console." Id. Another exhibit, a 1986 article in a trade publication, also draws a distinction between "technicians and board operators," who were responsible for controlling audio input/output consoles, and "anchorpeople." See MD000495 (describing how "[m]any all-news stations eliminated use of technicians and board operators, demanding instead that the anchorpeople run their own consoles").

Experts in the field also used the terms in this sense. The declaration of a non-inventor who had worked in radio for many years, also submitted as an exhibit to the claim amendments, related that the traditional method of coördinating the sources comprising a broadcast was "a manually operated audioboard, with the various sources being activated and their signals being routed by the manual action of an operator." MD000478. Indeed, in his deposition in this matter the lead inventor (who, again, is MDI's president) testified that "operators" were separate personnel from the "announcers"--also called "anchors" or

"newscasters"--who were "on the air," i.e., they were "engineers" who "were in the engineering department." Connell Depo. Tr. (document no. 66-10) at 13:11-13, 23:6-25:5, 26:5-27:2.⁵

MDI offers little to counter this reading (apart from, as already mentioned, unpersuasive assertions about the supposed "plain meaning" of the terms). Although it cites the patent and file history in its memoranda, the excerpts upon which it relies either fail to make any mention of the disputed terms, see, e.g., '324 Patent Col. 22:27-47, or use those terms in a manner that is mostly consistent with the defendants' proffered interpretation, see id. at 3:47-59; see also MD000242. The court is not wholly in agreement with the defendants--their limitation of the term "operator" to someone who works in a broadcast environment is inconsistent with the patent itself, which uses that term to refer to someone who works with either "production or broadcast systems," '324 Patent, col. 1:16-19⁶--but, for the reasons

⁵As extrinsic evidence, this testimony carries no weight in the court's analysis, since the intrinsic evidence alone is sufficient to remove any ambiguity from the disputed terms. See, e.g., Interactive Gift Express, 256 F.3d at 1332. The court notes it here only insofar as it confirms (and, in fact, nicely summarizes) what the intrinsic evidence already shows.

⁶As the excerpts cited supra indicate, however, the term "announcer" necessarily would seem to be limited to a broadcast environment. MDI appears to concede this.

already explicated, their definitions are preferable to those offered by MDI.

So, in light of all the evidence, the court construes "operators" as "personnel in an audio or video production or broadcast studio responsible for controlling the technical equipment necessary for an audio, visual, or audiovisual production or broadcast," and "announcers" as "personnel in an audio or video broadcast studio responsible for speaking or otherwise presenting information to listeners or viewers."

iii. "scheduled log of program events"/"the log"

For the reasons that follow, the court construes "scheduled log of program events" and "the log" as "a previously-assembled ordered list of events to be activated for broadcast or airing."

The parties agree that the two terms--"scheduled log of program events" and "the log"--refer to the same thing, but disagree as to what that is. MDI says the patentee once again acted as its own lexicographer, pointing to col. 3:54-59 of the patent, which includes the passage, "schedule of events, referred to as the log." The scheduled log of program events, it asserts, is therefore nothing more than a "schedule of events." For their part, the defendants, relying upon both intrinsic and extrinsic evidence, construe the term as meaning "the previously assembled ordered list of time-specific events to be broadcast or aired on

a radio or television station.” While neither definition is a direct hit, the defendants’ comes closer to striking the mark.

MDI’s reliance upon the passage above to argue that the patentee was acting as its own lexicographer is unpersuasive. As previously mentioned in this order, for a patentee to act in that capacity, it must “clearly set forth a definition of the disputed claim term” in either the specification or prosecution history, and must do this in a manner that “clearly express[es] an intent to define the term.” [GE Lighting Solutions](#), 750 F.3d at 1309. The patent’s reference to the program director “fill[ing] in the remaining portions of the schedule of events, referred to as the log, that have not been previously filled in by the marketing, accounting and news departments,” ‘324 Patent, col. 3:54-59, cannot easily be called a clear “definition” of the term “log.” Yet even assuming one could characterize this reference as a definition of that term, it is far from apparent from the context in which it appears that the patentee intended it to serve as a definition. The patentee was not acting as its own lexicographer in this instance.⁷

⁷Wholly apart from the inapplicability of the lexicographer principle, the court has some difficulties with MDI’s proposed construction, which reads the terms “log” and “program” out of the term altogether. The primary purpose of claim construction is “to clarify and when necessary to explain what the patentee covered by the claims,” [O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co., Ltd.](#), 521 F.3d 1351, 1362 (Fed. Cir. 2008), and by

MDI is not alone in looking to the lexicographer principle. The defendants' proposed construction also relies in substantial part on a description of the term provided by the patentee. The defendants, however, find their proposed definition in the prosecution history. In providing a cursory summary of the invention, the applicant, after describing how "[v]arious items are displayed on the touch screen, particularly including the scheduled log of program events," explains that "[t]he scheduled log of program events is an ordered list of the events to be activated for broadcast or airing." MD000272. In contrast to MDI's proffered construction, this passage satisfies the lexicographer principle, as it both "clearly sets forth a definition" of the term and--by virtue of its positioning immediately after the patentee's use of the term in a summary of the invention--clearly evinces "an intent to define the term." In this context, it represents "the avowed understanding of the patentee, expressed by him, or on his [behalf], when his application for the original patent was pending." [Markman v. Westview Instruments, Inc.](#), 52 F.3d 967, 980 (Fed. Cir. 1995) (quoting [Goodyear Dental Vulcanite Co. v. Davis](#), 102 U.S. 222, 227 (1880)). (In contrast to MDI's proffered construction, the

omitting descriptive terminology, MDI's proposal neither explains nor clarifies; it only serves to muddy the waters more.

passage also imparts significantly more meaning to the claim term. See supra n.7.)

MDI protests that the defendants' proffered construction of this term impermissibly restricts the breadth of the claim to a broadcast environment. That is not necessarily true; although the defendants' construction does include the word "broadcast," it indicates that a log may list events to be activated for "broadcast or airing," and the word "airing" arguably has a different connotation than "broadcast."⁸ Even assuming, though, that there is no substantive difference between the two, any resulting limitation of the claim is a limitation introduced by the patentee itself, since, as just discussed, the defendants draw their construction from the definition provided by the patentee in the course of prosecuting its patent application.

To be sure, the patent contemplates possible application of the invention in an "audio or video production studio" as well as a broadcast radio or television station, see '324 Patent, col. 1:12-14, 26:37-53, and the Court of Appeals for the Federal Circuit just recently reasserted that "constructions that exclude

⁸Because the parties have not yet had the opportunity to address the issue, the court declines to take a position at present on precisely what "airing" might mean in this context.

disclosed embodiments⁹] without a clear justification are disfavored," [Lexington Luminance LLC v. Amazon.com Inc.](#), --- Fed. Appx. ----, 2015 WL 524270, at *7 (Fed. Cir. Feb. 9, 2015). Even so, a claim "need not be construed to encompass all disclosed embodiments when the claim language is clearly limited to one or more embodiments." [TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc.](#), 529 F.3d 1364, 1375 (Fed. Cir. 2008). To the extent that the defendants' construction excludes the production studio embodiment (and, again, the court need not and does not take any position on that issue at this time), it falls within the [TIP](#) exception, for the reasons elucidated above.

The court need not, however, adopt that construction without alteration simply because the patentee acted as its own lexicographer. See, e.g., [Trading Techs. Int'l, Inc. v. eSpeed, Inc.](#), 595 F.3d 1340, 1353 (Fed. Cir. 2010) (affirming district court's rewriting of definition provided in specification). The defendants argue that pre-assembly is a necessary component of a

⁹In its memoranda, MDI repeatedly refers to the production studio embodiment as a "preferred embodiment" of the invention, and seeks refuge in the rule that a construction that excludes a preferred embodiment "is rarely, if ever, correct." [Vitronics](#), 90 F.3d at 1583. As the [Lexington Luminance](#) and [TIP](#) cases cited in the text above suggest, however, not every embodiment speculatively disclosed in a patent is "preferred." Here, the preferred embodiment is the one described in detail in the specification, which describes the invention's application in a radio station setting. It is readily encompassed within the defendants' construction.

"scheduled log of program events," although such a limitation is not reflected in the patentee's definition. The court agrees with them on this count. The patent makes this explicit multiple times. See, e.g., '324 Patent col. 2:30-32 ("log development is generally done one to two days before the program is aired"), 3:60-62 (describing how "a scheduled log of events for a particular period is prepared and given to the various personnel responsible for airing and broadcast"). Indeed, it finds perhaps its clearest expression in the patent's abstract, which describes how the claimed invention permits an announcer to activate events appearing in the log "in the scheduled order or in an order the announcer desires," id. Abstract. Absent pre-assembly, there would be no "scheduled order" of events; rather, the announcer's desire would, by necessity, always control the order of events. Yet further support for that reading is found in the prosecution history, in which the patentees described how unscheduled events could be added to the log, while scheduled events could be "removed or rearranged"--neither of which would be possible without pre-assembly. See MD000242.

The court parts ways with the defendants, however, insofar as their definition incorporates an additional limitation that the scheduled events are time-specific. To be sure, the term's use of the descriptor "scheduled" might also be taken to indicate

that the events on the list are assigned specific time slots. One common meaning of the verb "schedule," after all (from which the adjectival form is derived) is "to appoint, assign, or designate to do or receive something at a fixed time in the future." Webster's Third New Int'l Dictionary 2028 (1986). To "schedule," however, can also just mean "to place in a schedule" or "to make a schedule of," that is to say, to place in or make a "formal list" or a "detailed list," see id., a meaning that is already captured in the proposed definition's description of the "scheduled log" as an "ordered list." While the defendants point to particular excerpts from the patent specification in support of this limitation, see, e.g., '324 Patent col. 10:16-21, 11:65-12:20, as already described, see Part III.A.i, supra, this court may refer to the specification only "to ascertain the meaning of the claim term as it is used by the inventor in the context of the entirety of his invention, and not merely to limit a claim term, Interactive Gift Express, 256 F.3d at 1331-32 (internal quotation marks and alterations omitted), and the excerpts the defendants cite do not serve to shed any light on the meaning of the disputed term--merely to limit its scope.

So, in light of all the foregoing, the court construes the terms "scheduled log of program events" and "the log" as "a

previously-assembled ordered list of events to be activated for broadcast or airing.”

B. Means-plus-function limitations

“An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” 35 U.S.C. § 112(f). Construction of a means-plus-function limitation is a two-step process, the first step of which is to “identif[y] the particular claimed function.” HTC Corp. v. IPCom GmbH & Co., KG, 667 F.3d 1270, 1278 (Fed. Cir. 2012). This is a matter of claim construction, WMS Gaming, Inc. v. Int’l Game Tech., 184 F.3d 1339, 1347 (Fed. Cir. 1999), and it is only after performing this first step that the court undertakes the second step of the analysis by “look[ing] to the specification and identif[ying] the corresponding structure, material, or acts that perform that function,” HTC Corp., 667 F.3d at 1278. At this second step, the “structures disclosed in the specification and equivalents” limit the scope of the claim. Mettler-Toledo, 671 F.3d at 1296.

Claim 1 of the ‘324 Patent contains several such means-plus function limitations. The parties agree as to some of the

claimed functions, but disagree as to others; they also disagree as to the corresponding structure for each of these limitations. And their disagreement continues as to whether one of the elements in Claim 1--"touch screen means for displaying information and for receiving input information by way of the location of a touch on said touch screen means"--is even subject to § 112(f). For the reasons set forth below, the court finds that this clause is subject to § 112(f). It further interprets Claim 1's disputed functions, and determines the corresponding structure for the means-plus-function limitations, as follows.

i. touch screen means for displaying information and for receiving input information by way of the location of a touch on said touch screen means

As just noted, the parties disagree whether this element is even governed by § 112(f). "The question whether a claim element triggers section [112(f)] is ordinarily not a difficult one. Claim drafters conventionally use the preface 'means for' (or 'step for') when they intend to invoke section [112(f)], and there is seldom any confusion about whether section [112(f)] applies to a particular element." Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996). And so, "[t]he use of the word 'means' triggers a presumption that the inventor used this term advisedly to invoke the statutory mandate for means-plus-function clauses." Allen Eng'g Corp. v. Bartell

Indus., Inc., 299 F.3d 1336, 1347 (Fed. Cir. 2002) (some internal quotation marks omitted). Because this clause employs the phrase "touch screen means," that presumption comes into play here. The presumption may be overcome, however, if a claim element "recites sufficient structure or material for performing" the stated function. Id. MDI maintains that this is the case here: the term "touch screen," it says, discloses sufficient structure to perform the described function, and "the word 'means' adds nothing to the claim." MDI Opening Br. (document no. 64) at 14.

This argument encounters a stumbling block. For a claim term to recite sufficient structure to overcome the presumption, "the term, as the name for structure, [must have] a reasonably well understood meaning in the art." Allen Eng'g, 299 F.3d at 1347. MDI makes a valiant attempt to argue that this requirement is satisfied, contending that the "plain and ordinary meaning" of the term "touch screen" is "a computer that incorporates a touch screen capable of receiving input through a user's touch." MDI Opening Br. (document no. 64) at 14. Tellingly, however, MDI has not cited a shred of evidence in support of this understanding.

That is unsurprising, for, as the defendants point out, the evidence of record tends to indicate that a person of ordinary skill in the art at the time of the invention would understand the term "touch screen" to refer to something quite different. A

1987 presentation by John Connell, the lead inventor (and MDI's president) explains that "[t]he core of the Touchstone system," the precursor to the claimed invention, "is a capacitive touch screen on a highly visible color monitor." MD000502. Similarly, in his deposition in this matter, Connell agreed that the term "touch screen means" referred to "the overlay on the touch screen computer monitor." Connell Depo. Tr. (document no. 66-10) at 76:8-16. In other words, the term "touch screen," at least as the lead inventor understood, and understands, it, refers to a screen that is overlaid on a computer monitor, and not an integrated computer.

That is where MDI's argument that § 112(f) does not apply runs off the rails. As already mentioned, a claim must recite "sufficient structure for performing the described functions in their entirety" for the presumption of § 112(f)'s applicability to be overcome. [TriMed, Inc. v. Stryker Corp.](#), 514 F.3d 1256, 1259 (Fed. Cir. 2008). The parties agree that the function set forth in the clause is "displaying information and receiving input information by way of the location of a touch on [the] touch screen means." A touch screen of the type described in Connell's presentation and his deposition may well be able to "receive input information by way of the location of a touch," but it is not capable of "displaying information"--that function

would instead be performed by the monitor referred to in both the presentation and the deposition. So the court is constrained to conclude that the "touch screen means" clause triggers § 112(f).

The court therefore must look to the specification to identify the actual means for performing the stated functions. And the result is actually quite close to what MDI has asserted (incorrectly, as just noted) is the "plain and ordinary meaning" of "touch screen": "a computer integrated with a touch screen." See '324 Patent, Col. 1:65-66. As the patent explains, such a computer is intended to both display information and interact with an announcer or operator who inputs information by touching the screen. Id. Col. 2:3-4, 2:43-50; see also id. Col. 5:21-27; Col. 14:1-18.

The defendants maintain that the corresponding structure for the specified function is significantly more narrow.¹⁰ They argue that the "touch screen means" must be a touch screen

¹⁰In an exhibit to the parties' joint claim construction and prehearing statement, the defendants also take the position that the patent's specification identifies "insufficient structure" for "performing the displaying and receiving functions, and thus the patent is indefinite." Joint Claim Constr. & P'hg. St., Exh. C (document no. 60-3). The defendants have not advanced any developed argument to that effect in their memoranda, so the court considers any such argument waived. See, e.g., Boss Control, Inc. v. Bombardier Inc., 410 F.3d 1372, 1380 (Fed. Cir. 2005) (failure to present substantive arguments to district court on an issue results in waiver). It is, in any event, incorrect, for the reasons discussed below.

computer identical to the one described in the "detailed description of the preferred embodiment" section of the patent's specification, i.e., a computer that, in addition to displaying information and receiving input information, is programmed to "receive schedule log information from a central computer and control multiple sources," is "dedicated to running the touch screen software," and is distinct from two other computers identified in the patent--the "file server computer" and the "director computer." In so arguing, however, the defendants run headlong into one of the cardinal rules of construing means-plus-function limitations: when identifying the structure that corresponds to a claimed function, "a court may not import functional limitations that are not recited in the claim, or structural limitations from the written description that are unnecessary to perform the claimed function." [Welker Bearing Co. v. PHD, Inc.](#), 550 F.3d 1090, 1097 (Fed. Cir. 2008) (quoting [Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.](#), 239 F.3d 1225, 1233 (Fed. Cir. 2001)); see also [Toro Co. v. White Consol. Indus., Inc.](#), 266 F.3d 1367, 1371-72 (Fed. Cir. 2001) (other functions performed by a structure "do not become part of the claimed structure unless claimed as such"). The various components of the defendants' identified structure consist largely of functional limitations absent from the claim itself

(receipt of log information; control of sources; running certain software) or structural limitations that are unnecessary to the performance of the claimed function (separateness of the touch screen computer from other computers).

In an attempt to explain their reasons for including these limitations in their proposed structure, the defendants assert that identifying the structure as, simply, "a computer equipped with a touch screen" runs afoul of yet another cardinal rule of construing means-plus-function limitations: ordinarily, "the structure disclosed in the specification" must "be more than simply a general purpose computer or microprocessor." [Aristocrat Techs. Australia Pty Ltd. v. Int'l Game Tech.](#), 521 F.3d 1328, 1333 (Fed. Cir. 2008). Absent a specific algorithm or other limiting principle, the defendants claim, Claim 1 would be indefinite, and thus invalid. *See, e.g.,* [Function Media, LLC v. Google, Inc.](#), 708 F.3d 1310, 1318-19 (Fed. Cir. 2013).

As MDI correctly notes, however, where claimed functions "can be achieved by any general purpose computer without special programming," it is "not necessary to disclose more structure than the general purpose processor that performs those functions." [In re Katz Interactive Call Processing Patent Litig.](#), 639 F.3d 1303, 1316 (Fed. Cir. 2011) (holding general purpose computer to be sufficient structure for performing

functions of "processing," "receiving," and "storing"). To be sure, the circumstances in which this is true are "rare." [Ergo Licensing, LLC v. CareFusion 303, Inc.](#), 673 F.3d 1361, 1365 (Fed. Cir. 2012). The functions described in the "touch screen means" clause, though--"displaying information" and "receiving input information by way of the location of a touch on [the] touch screen means"--are precisely the types of functions that can be performed by a general purpose computer without any special programming. Cf. [e-LYNXX Corp. v. Innerworkings, Inc.](#), No. 10-cv-2535, 2012 WL 4484921, *21 (M.D. Pa. Sept. 27, 2012) ("`receiving' an electronic communication is a function that may be performed by any general purpose computer"); [Utd. Video Props., Inc. v. Amazon.com, Inc.](#), No. 11-cv-003-RGA, 2012 WL 2370318, *11 (D. Del. June 22, 2012) ("`displaying' an icon is a common function that can be achieved by any general purpose computer without special programming").¹¹

¹¹At oral argument, defense counsel asserted that the [Katz](#) principle is inapplicable because at the time of the invention, receiving input information via a touch screen was not something most general purpose computers could accomplish without special programming. Yet even general purpose computers in the present day require "special programming"--i.e., software--to interpret and process input information from keyboards, mice, joysticks, and the like. But the fact that such software may be required to enable a computer to receive input information via any of these common devices does not, in this court's view, mean that any time a claim includes a means-plus-function limitation relying upon a computer equipped with one of those devices, the specification must include the particular algorithm used to operate the

In sum, then, the court concludes that the corresponding structure for this limitation consists of "a computer integrated with a touch screen," and equivalents thereof.

ii. means for generating and displaying on said touch screen means a portion of a scheduled log of program events

With respect to this means-plus-function limitation, the parties again agree on the claimed function--"generating and displaying on said touch screen means a portion of a scheduled log of program events"--but take wildly varying positions on the structure that corresponds to this function. MDI proposes that the structure for this limitation is, simply, the "director computer and touch screen computer," while the defendants divide the structure into a "generating structure" and "displaying structure" and provide lengthy proposals for each.¹² None of

hardware or risk rendering the claim invalid for indefiniteness under [Aristocrat Technologies](#), [Function Media](#), and similar cases.

¹²The "generating structure," the defendants assert, is the

director computer 20, used by a program director, that is programmed to prepare a completed scheduled log of events. The required structure also includes the file server (central) computer 22, which is connected to the director computer 20 to allow data contained in the many signal sources used in the overall system to be transferred back and forth between the director computer 20 and the file server computer 22. The required structure also includes the touch screen computer 24 that is programmed to receive the scheduled program log of events from the central computer.

these proposals, however, successfully avoid the infirmities mentioned in the court's discussion of the previous means-plus-function limitation.

Specifically, MDI's proposal, which refers simply to two different computers, is unworkably broad. As the defendants point out, this proposal does nothing more than describe general-purpose computers with no reference to the type of programming necessary to perform the functions in question. But, as just noted, see Part III.B.i supra, unless the claimed function "can be achieved by any general purpose computer without special programming," In re Katz, 639 F.3d at 1316--which may be the case for the "displaying" function, but not the "generating" one--"the structure disclosed in the specification" must "be more than simply a general purpose computer or microprocessor," Aristocrat Techs., 521 F.3d at 1333. Rather, where a means-plus-function claim term must be implemented by a computer, the corresponding structure must be an algorithm disclosed in the specification. Id. While the structure need not include computer code, it should consist of "a series of instructions for the computer to follow," expressed "as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient

Their "displaying structure" is the "touch screen computer 24 that is programmed to drive the touch screen display to display a portion of the received scheduled program log of events."

structure . . . for a person of skill in the field to provide an operative software program for the specified function.” [Typhoon Touch Techs., Inc. v. Dell, Inc.](#), 659 F.3d 1376, 1384-85 (Fed. Cir. 2011) (internal quotation marks and citations omitted). MDI’s proposed structure, in omitting an algorithm by which the claimed function is to be performed, falls short.

Although they are more detailed, the defendants’ proposals fare no better. They, too, fail to include any description of the algorithm by which the claimed function is to be performed. Although the defendants’ proposals do state that the computers implementing the function must be “programmed to” do one task or another, that is not enough: such terminology “simply references a computer that is programmed so that it performs the function in question, which is to say that the function is performed by a computer that is capable of performing the function.” [Aristocrat Techs.](#), 521 F.3d at 1334. And that “imposes no limitation whatever.” [Id.](#)

The parties’ failure to include an appropriate algorithm in their proposals has a simple explanation: the specification does not include a description of the steps a computer must perform to generate a log of program events. According to the patent, the log is generated using the “director computer” described therein. ’324 Patent, col. 6:66; see also id. col. 4:55-57 (“The director

computer 20 is used . . . to prepare a complete scheduled log of events"). Yet when one turns to the specification's description of the "director/editor station" that includes the director computer, one finds only a single, cursory paragraph describing a process in which an individual interacting with that computer can "edit the hourly logs of program and event listings" and "change the schedule as received from the billing computer." Id. col. 7:24-35. Another section describes how to "insert an event in the log" after the log has already been generated and sent to the "touch screen computer." Id. col. 10:11-52. There is no description, though (even in the accompanying figures) of how the logs, or the schedule, are created in the first instance.

As already mentioned, for a specification to disclose sufficient structure to perform a computer-implemented function such as "generating" a log of program events, it must contain "a series of instructions for the computer to follow" so as to enable "person of skill in the field to provide an operative software program for the specified function." [Typhoon Touch](#), 659 F.3d at 1384-85. The court has, despite its best efforts, been unable to locate any such instructions in the '324 Patent. At best, the specification provides instructions for a computer user (but not the computer) to follow when editing (but not generating) a log of program events. So the court is not able to

identify a sufficient corresponding structure for the function of “generating . . . a portion of a scheduled log of program events.” While this may well result in indefiniteness, and thus invalidity, of the ‘324 Patent, see, e.g., Function Media, 708 F.3d at 1318-19, the court expressly does not hold at this time that the patent is invalid, but leaves that issue to be addressed in the context of summary judgment, if necessary.

As discussed in the immediately preceding section of this order, the subsidiary function of “displaying” the log, or a portion thereof, can be performed by any general purpose computer without special programming, and thus no algorithm is necessary. See Part III.B.i, supra. The clause, moreover, makes clear that the “displaying” function is to be performed by the “touch screen means,” which, as the court concluded in the previous section, consists of “a computer integrated with a touch screen,” and equivalents thereof.

iii. means for correlating a program event with a source

As with the means-plus-function limitation just discussed, the parties agree on the function--“correlating a program event with a source”--and disagree on the corresponding structure. As with the limitation just discussed, their proposals for that structure--for MDI, the “director computer and touch screen

computer," and for the defendants, the "director computer 20, used by the program director, that is programmed to provide the necessary hardware correlation information, and the touch screen computer 24 that is programmed to correlate the external hardware with the desired event based on information from the distinct and separate director computer 20 regarding the sources available"-- come up short, as they fail to identify any algorithm by which a computer can be programmed to perform the function. And, as with the limitation just discussed, this shortcoming is attributable to the patent's failure to disclose such an algorithm.

The defendants correctly point out that the patent's specification "contains only two brief references to correlating or correlation," neither of which instructs a person of skill in the field how to program a computer to correlate program events with sources. Defts.' Opening Br. (document no. 65) at 32-33; see also Defts.' Resp. Br. (document no. 70) at 11-12 n.4.

Although the patent again states that the "director computer" is used to "provid[e] the necessary hardware correlation information to allow the touch screen computer to activate the correct source device," '324 Patent, col. 4:59-63, the description of the "director/editor station" again fails to provide a necessary series of instructions for a computer to follow in order to perform that function. Once again, at best, it describes a

series of steps that a user of the computer would follow to achieve a result, describing how the computer “interacts with the program director . . . to change the desired feeds to the correct locations” or “to change the available feeds and the information on the sources and their control.” See id. col. 7:36-8:6.¹³

So, for the second time, the court is unable to locate in the specification any “series of instructions for the computer to follow,” expressed in a manner that would enable “a person of skill in the field to provide an operative software program for the specified function.” [Typhoon Touch](#), 659 F.3d at 1384-85. As a result, the court cannot identify a sufficient corresponding structure for the function of “correlating a program event with a source.” Yet again, though, the court takes no position on the legal effect of this conclusion at this time, and leaves that issue for summary judgment. See Part III.B.ii, supra.

iv. means for allowing an operator to select a program event from the log for activation at that time by touching said touch screen means

¹³The description of the “director/editor station” also can be taken to suggest that it is not the director computer, but the touch screen computer, that performs the correlation. See ‘324 Patent col. 7:66-8:1 (referring to “information required by the touch screen computer to correlate the hardware with the desired event”). The specification’s detailed description of the “touch screen station,” however, provides even less guidance on how program events are correlated with sources than the description of the “director/editor station.”

means for activating the selected event

means for allowing the operator to de-select an active event from the activated status at that time by touching said touch screen means

means for de-activating the de-selected event

With respect to these four means-plus-function limitations, the parties agree on neither the claimed functions nor the means by which those functions are to be accomplished. As all four concern similar technologies, and similar arguments by the parties, the court considers them together.

a. Claimed functions

MDI asserts that to "select" or "de-select" a program event mean to "touch the screen to indicate a program event" to be either activated or deactivated, to "activate" an event means to "play" that event, and to "deactivate" an event means to "pause, stop, or delete the de-selected event." The defendants, for their part, assert that to "select" or "de-select" a program event means to "touch on a program event option associated with" a program event, and that to "activate" and "deactivate" a program event mean, respectively, to transmit and stop the transmission of the program event "from the associated external device to an output of the system."

The parties' disagreement largely stems from the defendants' position that the meaning of functional terms used in means-plus-

function clauses must--like the determination of corresponding structures--be limited by the structure disclosed in the patent's specification. See Defts.' Opening Br. (document no. 65) at 38, 42 (arguing for construction of functional terms drawn from structure in specification); Defts.' Resp. Br. (document no. 70) at 9-11 (asserting that the functional "terms should be construed . . . in accordance with the structure identified in the Patent"). So the defendants' proffered constructions for these terms make reference to structural and systemic terms and concepts disclosed in the specification, e.g., "external device" and "program event option." Yet the defendants have cited, and the court has found, no support for the assertion that a court tasked with identifying the claimed function in a means-plus-function limitation must rely solely upon the specification in order to carry out that task. The court must, of course, interpret the function in light of the specification, and may look to the specification to ascertain the meaning of the functional terms--just as it would do when interpreting any claim term, see, e.g., Interactive Gift Express, 256 F.3d at 1331-32; Raytheon Co., 724 F.2d at 957--but is not inclined to accept the defendants' invitation to view the specification as a limitation on those terms.

Read in light of the specification, the patent as a whole, and other intrinsic evidence of record, the meanings of the disputed functional terms are straightforward. (Indeed, stripped of the aforementioned structural and systemic terms and concepts --which are more properly addressed at the second step of the means-plus-function analysis, see Part III.B.iv.b, infra--the defendants' proposed constructions do not differ significantly from MDI's.)

To "select a program event from the log for activation" means to "indicate that a program event is to be activated," while to "de-select an active event from the activated status" means to "indicate that an active program event is to be deactivated."¹⁴ See MD000459-MD000460 ("[W]hen the operator selects an event, source or command by touching the touch screen, the event[,] source or command is activated, deactivated or performed at that time."); cf. '324 Patent col. 14:1-19, Fig. 4A. These readings adhere more closely to MDI's proposals than to the

¹⁴As previously noted, both parties' proposed constructions of these terms incorporate the verb "touch." So, for example, the defendants read the term "select a program event from the log for activation" as "touch on a program event option associated with the program event," while MDI reads it as "touch the screen to indicate a program event to be activated." In context, however, including "touch" in either term is redundant, since the means-plus-function limitations themselves go on to expressly indicate that each function is accomplished "by touching [the] touch screen means." '324 Patent, col. 27:4-10. The court has therefore omitted "touch" from its construction of the terms.

defendants', with good reason. The defendants' proposals replace both "program event" and "active event" with "program event option"; these terms, however, are not interchangeable. That is made clear at col. 14:6-8 of the '324 Patent, which draws a distinction between the selection of an "event" and the selection of an "event operation" (which, the defendants concede, is equivalent to an "event option").

While that alone is grounds for rejecting the defendants' reading, it also bears noting that replacing "program event" with "program event option" in the manner defendants propose would render other claims superfluous. Among the program event options identified in the patent are removing and fading, see id. col. 14:31-46, yet claims 12 and 17 of the patent are dependent claims that build on claim 1 solely by the addition of means to remove and fade a program event, see id. col. 27:57-59, col. 28:7-9. If one "selects a program event from the log for activation" by selecting a "program event option," it is difficult to see how claims 12 and 17 would not be rendered superfluous. The doctrine of claim differentiation counsels against this result. See generally [Curtiss-Wright Flow Control Corp. v. Velan, Inc.](#), 438 F.3d 1374, 1380-81 (Fed. Cir. 2006) (discussing the "presumption that each claim in a patent has a different scope"); cf. [Phillips v. AWH Corp.](#), 415 F.3d 1303, 1314-15 (Fed. Cir. 2005) (en banc)

("[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.").

"Activating the selected event" or "activation" of an event means "transmitting the selected program event to the output of the system," while "de-activating the de-selected event" means "stopping the de-selected event from transmitting to the output of the system." Although these readings adopt the defendants' proposed language, the court views MDI's proposals--which interpret "activating" as "play[ing]" and "de-activating" as "paus[ing], stop[ping], or delet[ing]"--as more or less identical to the defendants'. To "play" an audio or visual event is, at least in this court's view, just another way of saying that the event will be transmitted to an output; similarly, to "pause, stop, or delete" an event is, so far as the court understands MDI's employment of these terms, simply another way of saying that the transmission of the event to the output will be stopped. The court has adopted the defendants' language solely because it is more precise and finds a solid foothold in the language of the patent and other intrinsic evidence. See '324 Patent, col. 15:4-5 ("It is to be noted that all events activated are actually being mixed and transmitted to the desired output source."); see

also MD000272 (discussing "the output source where the activated events are sent").

b. Corresponding structures

Once again, while the parties agree that the functions set forth in these means-plus-function limitations are computer-implemented, their proposals for the corresponding structure (for MDI, the "touch screen computer," and for the defendants, the "touch screen computer 24 that is programmed" to perform the functions) are simply unworkable in light of the governing law, which generally requires an algorithm for such functions.¹⁵ See Part III.B.ii, supra. And, again, the court has not been able to locate in the specification an algorithm with which a computer can be programmed to perform those functions. The court is, therefore, unable to identify a corresponding structure for the claimed functions. Again, the court will take no position on the legal significance of this conclusion at present, and leaves that issue for summary judgment. See Part III.B.ii, supra.

¹⁵The defendants' proposals also incorporate the concept that a source device must be "external" to the computer that performs the function. As already discussed, however, a court cannot import into its description of the corresponding structure "structural limitations from the written description that are unnecessary to perform the claimed function." Welker Bearing, 550 F.3d at 1097. External source devices are not necessary to the functions of selecting, activating, de-selecting, and de-activating, and therefore have no place in a description of the structure that corresponds to these means-plus-function elements.

IV. Conclusion

For the reasons set forth above, the court adopts the following constructions of the disputed claim terms:

Disputed Term	Construction
source	an electrical or electronic device which provides a signal which is an event which may form a portion of the program
plurality of signal sources	two or more devices which provide a signal which is an event that may form a portion of the program
operators	personnel in an audio or video production or broadcast studio responsible for controlling the technical equipment necessary for an audio, visual, or audiovisual production or broadcast
announcers	personnel in an audio or video broadcast studio responsible for speaking or otherwise presenting information to listeners or viewers
scheduled log of program events/the log	a previously-assembled ordered list of events to be activated for broadcast or airing
select a program event from the log for activation	indicate that a program event is to be activated
de-select an active event from the activated status	indicate that an active program event is to be de-activated
activating the selected event	transmitting the selected program event to the output of the system
de-activating the de-selected event	stopping the de-selected event from transmitting to the output of the system

As further set forth above, the corresponding structures for each of Claim 1's means-plus-function elements are as follows:

Means-plus-function element	Structure
"touch screen means..."	a computer integrated with a touch screen, and equivalents thereof
"means for generating and displaying..."	<i>generating</i> : indeterminate <i>displaying</i> : a computer integrated with a touch screen, and equivalents thereof
"means for correlating..."	indeterminate
"means for allowing an operator to select..."	indeterminate
"means for activating..."	indeterminate
"means for allowing the operator to de-select..."	indeterminate
"means for de-activating..."	indeterminate

SO ORDERED.



 Joseph N. Laplante
 United States District Judge

Dated: April 23, 2015

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